

## Abstract

Optical fibers (1, 1') are fusion spliced to each other by using a CO<sub>2</sub> laser (109) having an emission wavelength of 9.3 microm. The heat absorption of the fibers is higher and the variation of the absorption for small deviations of the wavelength is smaller than at the conventional wavelength of 10.6 microm. As a result, less laser power is needed, the laser construction may be more compact and safety problems can easier be handled. The optical arrangement for the light beam of the CO<sub>2</sub> laser includes deflecting and focusing the collimated laser beam (20) emitted by the laser using a mirror (10) having a curved surface of concave nearly paraboloid shape, the splice position (30) located at a small distance of the focus of the mirror and well outside the collimated beam.